

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) An apparatus for classifying information transmitted over a communications network into content category classifications, the apparatus comprising:

means for capturing network packets or fragments of said packets transmitted in a session of transmission of information from an information supplying communications terminal towards a remote user communications terminal on a path of said communications network, said capture being prior to the packets reaching the remote terminal, and obtaining ~~one~~ ~~or more~~ transmission interaction characteristics based on the captured packets of the information having at least one image, each said packet containing a network protocol, a network address of the information supplying terminal, a network address of the remote terminal, and a portion of the information, said ~~one or more~~ transmission interaction characteristics including ~~at least one of~~ i) ~~date and time stamps,~~ ii) size of image transmission activities, ~~iii)~~ ii) size of text transmission activities, ~~iv)~~ and iii) ratio of image to text transmission activities, ; and ~~v) variations in~~

~~signal patterns within the packets of the transmission;~~ and

analysing means arranged to compare any of the interaction characteristics obtained from the captured packets with corresponding interaction characteristics of known information contained in a list of predetermined content category classifications of information, and having a statistical modeling arrangement for predicting a content category classification of unknown information based on said ~~one or more~~ obtained interaction characteristics, the content category classification prediction being free of any user input and free of any relevancy as to a particular user;

said statistical modeling arrangement having a first statistical modeling module adapted to provide a first content category prediction based on the size of image transmission activities, and a second statistical modeling module adapted to provide a second content category prediction based on the ratio of image to text transmission activities, and the analysing means applying a weighting formula to said first and second content category predictions to provide said content category classification prediction;

wherein the apparatus is arranged to respond to the predicted content category classification of the captured interaction characteristics provided by the analysing means to prevent the captured packets of any interaction characteristics with a predicted classification listed as

undesirable from being forwarded further along the path to the remote user communications terminal.

2-4. (canceled).

5. (currently amended) An apparatus for classifying user profiles of users accessing information or content servers on a communications network, the apparatus comprising:

means for capturing network packets or fragments of said packets transmitted in a session of transmission of information from a user communications terminal or provided by any one of said content servers towards a remote user communications terminal on a path of said communications network, said capture being prior to the packets reaching the remote terminal, and obtaining ~~one or more~~ transmission interaction characteristics based on the captured packets of the information having at least one image, each said packet containing a network protocol, a network address of the information supplying terminal, a network address of the remote terminal, and portion of the information, said ~~one or more~~ transmission interaction characteristics including i) ~~date and time stamps,~~ ii) size of image transmission activities, ~~iii)~~ ii) size of text transmission activities, ~~iv)~~ and iii) ratio of image to text transmission activities, ~~and v) variations in signal patterns within the packets of the~~

~~transmission;~~

analysing means arranged to compare the interaction characteristics obtained from the captured packets with corresponding interaction characteristics of known information contained in a list of predetermined content category classifications of information, and having a statistical modeling arrangement for predicting a content category classification of said information or said one content server based on said one or more interaction characteristics, the content category classification prediction being free of any user input and free of any relevancy as to a particular user, and

means for classifying user profile in accordance with the predicted content category classification;

said statistical modeling arrangement having a first statistical modeling module adapted to provide a first content category prediction based on the size of image transmission activities, and a second statistical modeling module adapted to provide a second content category prediction based on the ratio of image to text transmission activities, and the analysing means applying a weighting formula to said first and second content category predictions to provide said content category classification prediction;

wherein the apparatus is arranged to respond to the predicted content category classification of the obtained

interaction characteristics provided by the analysing means to prevent the captured packets of any interaction characteristics with a predicted classification listed as undesirable from being forwarded further along the path to the remote user communications terminal.

6. (canceled)

7. (previously presented) The apparatus according to claim 1, further comprising means for storing said one or more transmission interaction characteristics.

8. (canceled)

9. (currently amended) The apparatus according to claim 1, wherein said ~~one or more~~ transmission characteristics are obtained from network packets or fragments thereof.

10. (currently amended) The apparatus according to claim 1, wherein the analysing means includes profiling means for providing profiles of interactions based on said ~~one or more~~ transmission interaction characteristics.

11. (currently amended) The apparatus according to claim 10, wherein said profiling means is arranged to process

said ~~one or more~~ transmission interaction characteristics for providing any one or more of: frequency of interaction; duration of interaction; duration of absence of interaction; patterns of content transmission; average number of http links within an object of related sites; and average number of like sites visited within a time frame for forming interaction profiles; and wherein the analysing means is adapted to use the interaction profiles for predicting content category classifications.

12. (previously presented) The apparatus according to claim 10, further comprising a knowledge base of predetermined profiles, and the analysing means is adapted to predict a particular content category classification based on a comparison between the profile of information to be classified and predetermined profiles.

13. (previously presented) The apparatus according to claim 12, further comprising means for updating the knowledge base so that the content category classification prediction can be enhanced following classifications.

14. (previously presented) The apparatus according to claim 1, wherein said communications terminals including at least one content server and at least one user communications

terminal, and the packets of information are intended for transmission from the content server to the user communications terminal, the content server being classified according to the content category classification predicted by the analysing means.

15. (currently amended) The apparatus according to claim 1, wherein,

said transmission interaction characteristics further including iv) the variations in word patterns within the packets of the transmission, said statistical modeling arrangement further having a third statistical modeling module adapted to provide a third content category prediction based on a count of occurrences word patterns matching pre-determined words, and the analysing means applying the weighting formula to said first, second and third content category predictions to provide said content category classification prediction;

~~the means for capturing network packets being adapted to obtain transmission characteristics from at least two of i) the date and time stamps, ii) the size of image transmission activities, iii) the size of text transmission activities, iv) the ratio of image to text transmission activities, and v) the variations in transmission content patterns within the packets of the transmission; and~~

the analysing means for predicting the content category classifications of said information is based on ~~said~~ at least ~~two~~ said transmission interaction characteristics i) to iv), and the content category classification prediction being free of any user input and free of any relevancy as to a current user.

16. (canceled)

17. (currently amended) The apparatus of claim 1, wherein,

the means for capturing network packets being adapted to obtain transmission interaction characteristics from each of i) ~~the date and time stamps,~~ ~~ii)~~ the size of image transmission activities, ~~iii)~~ ii) the size of text transmission activities, ~~iv)~~ iii) the ratio of image to text transmission activities, ~~and v)~~ iv) the variations in transmission ~~content~~ word patterns within the packets of the transmission, v) the date and time stamps, and vi) the variations in transmission content patterns within the packets of the transmission; and

the analysing means for predicting the content category classification of said information is based on each of said transmission interaction characteristics, the content category classification prediction being free of any user



input and free of any relevancy as to a current user.

18. (currently amended) The apparatus according to claim 1, wherein,

the capturing means capturing from each packet said transmission interaction characteristics including each of i) ~~the date and time stamps,~~ ii) the size of image transmission activities, ~~iii)~~ ii) the size of text transmission activities, ~~iv)~~ iii) ratio of image to text transmission activities, ~~and~~ ~~v)~~ iv) the variations in ~~content~~ word patterns within the packets of the transmission, and v) the date and time stamps, and

the analysing means further compares each captured interaction characteristics obtained with the corresponding interaction characteristics of the known information contained in the list of predetermined content category classifications of information, and predicts the content category classification of the unknown information based on the comparisons as undesirable image content to be prevented from being forwarded toward the remote user communications terminal.

19. (canceled)

20. (currently amended) The apparatus according to claim 5, wherein,

the capturing means capturing from each packet said transmission characteristics including each of i) ~~the date and time stamps, ii)~~ the size of image transmission activities, ~~iii)~~ ii) the size of text transmission activities, ~~iv)~~ iii) the ratio of image to text transmission activities, ~~and v)~~ iv) the variations in content patterns within the packets of the transmission, and v) date and time stamps, and

the analysing means compares each captured interaction characteristics obtained with the corresponding interaction characteristics of the known information contained in a list of predetermined content category classifications of information, and predicts the content category classification of the unknown information based on the comparisons as undesirable image content to be prevented from being forwarded toward the remote user communications terminal.

21. (previously presented) The apparatus according to claim 5, wherein,

the capturing means capturing from each packet said transmission characteristics including each of i) the size of image transmission activities, ii) the ratio of image to text transmission activities, and

the analysing means compares each captured interaction characteristics of i) the size of image transmission activities, ii) the ratio of image to text transmission activities obtained with the corresponding interaction characteristics of the known information contained in a list of predetermined content category classifications of information, and predicts the content category classification of the unknown information based on the comparisons as undesirable image content to be prevented from being forwarded toward the remote user communications terminal.

22. (currently amended) An apparatus for classifying information transmitted over a communications network into content category classifications, the apparatus comprising:

a capture means capturing image information packets transmitted over a network path during a session transmitting information from an information supplying communications terminal towards a remote user communications terminal, the packet capture being prior to packets reaching the remote terminal,

captured content of each captured packet including

- i) a network protocol,
- ii) a network address of the information supplying terminal,
- iii) a network address of the remote terminal,

- iv) an image content,
- v) any contained text content;

characteristic-obtaining means obtaining a transmission interaction characteristic based on the content of the captured packets, said obtained transmission interaction characteristics including ~~at least one of i) date and time stamps, ii) size of image transmission activities, iii) ii) size of text transmission activities, iv) and iii) ratio of image to text transmission activities, and v) variations in content patterns within the packets of the transmission;~~ and

analyzing means arranged to compare the interaction characteristics obtained from the captured packets with corresponding interaction characteristics of known information contained in a list of predetermined content category classifications of information, and having a statistical modeling arrangement for predicting a content category classification of unknown information based on said obtained interaction characteristics,

said statistical modeling arrangement having a first statistical modeling module adapted to provide a first content category prediction based on the size of image transmission activities, and a second statistical modeling module adapted to provide a second content category prediction based on the ratio of image to text transmission activities, and the analysing means applying a weighting formula to said first and

second content category predictions to provide said content category classification prediction;

wherein the apparatus is arranged to respond to the predicted content category classification of the captured interaction characteristics provided by the analyzing means to prevent the captured packets of any interaction characteristics with a predicted classification listed as undesirable image from being forwarded further along the path to the remote user communications terminal.

23. (previously presented) The apparatus of claim 22, wherein, the content category classification prediction is free of any user input and free of any relevancy as to a particular user.

24. (new) The apparatus of claim 1, wherein, said transmission interaction characteristics further including iv) variations in content patterns within the packets of the transmission; and

said statistic modeling arrangement further having a third statistical modeling module adapted to provide a third content category prediction based on a count of occurrences words in the content patterns matching words in a list of known undesirable words, and the analysing means applying a weighting formula to said first, second and third content

category predictions to provide said content category classification prediction.

25. (new) The apparatus of claim 5, wherein, said transmission interaction characteristics further including iv) variations in content patterns within the packets of the transmission; and

said statistic modeling arrangement further having a third statistical modeling module adapted to provide a third content category prediction based on a count of occurrences words in the content patterns matching words in a list of known undesirable words, and the analysing means applying a weighting formula to said first, second and third content category predictions to provide said content category classification prediction.

26. (new) The apparatus of claim 22, wherein, said transmission interaction characteristics further including iv) variations in content patterns within the packets of the transmission; and

said statistic modeling arrangement further having a third statistical modeling module adapted to provide a third content category prediction based on a count of occurrences words in the content patterns matching words in a list of known undesirable words, and the analyzing means applying a

weighting formula to said first, second and third content category predictions to provide said content category classification prediction.